

IN THE SPECIFICATION:

Please amend the specification as indicated below.

In the paragraph beginning at page 5, line 11:

Program audio is provided to a distributor, such as a cable system, by a source with a set level of loudness. The audio is typically broadcast by the distributor at the set loudness. Viewers adjust the loudness level to meet their own subjective, desired level by adjusting the volume control on their TV. Viewers typically watch programming provided by different sources and there is no currently accepted standard for setting loudness of audio provided with programs. Each source typically sets a loudness level in accordance with their own practices. For example, a cable system ~~broadcast~~ broadcasts a program comprising content by one source and advertising provided by one or more other sources. As viewers change channels, they may also view programs from different sources. In VOD, MOD and network PVR systems, programs viewed on the same channel may also have been provided to the systems by different sources. Ideally, once a viewer sets the volume control of their TV to a desired volume, it would not be necessary to adjust the volume control. Often, however, there are sudden loudness changes as a program transitions to and from advertising with different loudness settings or from one program to another program with a different loudness setting, requiring the viewer to adjust the volume. This can be annoying.

In the paragraph beginning at page 6, line 8:

In an attempt to quantify loudness as it is perceived by a listener, CBS Laboratories developed a loudness meter in the 1960's that divided audio signals into seven (7) bands, weighted the gain of each band to match the equal loudness curve of the human ear, averaged each band with a given time constant, summed the averages, and averaged the total again with a time constant about 13 times longer than the first time constant. A few broadcast audio processor

manufacturers currently use an algorithm based on the CBS Loudness Meter to detect audio that could sound too loud to a listener. Gain reduction is applied to reduce the loudness. (~~Audio Notes: Tim Carroll, Exploring the AC-3 Audio Standard for ATSC (TV Technology.com, www.tvtechnology.com, Jun. 26, 2002)~~ (Audio Notes: Tim Carroll, Exploring the AC-3 Audio Standard for ATSC (retrieved from IV Technology dot com, www dot tvtechnology dot com, Jun. 26, 2002))).

In the paragraph beginning at page 13, line 20:

FIG. 7 is a graph of the intervals of ~~FIG. 7~~ FIG. 6, and their loudnesses;

In the paragraph beginning at page 15, line 1:

Sources 12 create and broadcast programming to cable system 14 through an origination system 20. An example of an origination system is discussed further below and is described in more detail in copending, commonly assigned application Ser. No. 10/263,015 ("the 015 application"), filed on Oct. 2, 2002, which is incorporated by reference herein. Sources 12 include analog and digital satellite sources that typically provide the traditional forms of television broadcast programs and information services. Sources 12 also include terrestrial broadcasters, such as broadcast networks (CBS, NBC, ABC, etc., for example), which typically transmit content from one ground antenna to another ground antenna and/or via cable. Sources 12 may also include application servers, which typically provide executable code and data for application specific services such as database services, network management services, transactional electronic commerce services, system administration console services, application specific services (such as stock ticker, sports ticker, weather and interactive program guide data), resource management service, connection management services, subscriber ~~ear~~ care services, billing services, operation system services, and object management services; and media servers, which provide time-critical media assets

such as Moving Pictures Experts Group 2 ("MPEG-2") standard encoded video and audio, MPEG-2 encoded still images, bit-mapped graphic images, PCM digital audio, MPEG audio, Dolby Digital AC-3 audio, three dimensional graphic objects, application programs, application data files, etc. Although specific examples of programs and services which may be provided by the aforementioned sources are given herein, other programs and services may also be provided by these or other sources without departing from the spirit and scope of the invention. For example, one or more sources may be vendors of programming, such as movie or on-demand programming, for example.

In the paragraph beginning at page 17, line 7:

FIG. 2 shows certain components of an example of headend 22 of cable system 14. Headend 22 includes an acquisition and staging ("A/S") processor 70, schedule manager 72 and asset manager 74. Asset manager 74 includes memory 76. Schedule manager includes memory 77. Headend 22 receives programming from sources 12 via receiver 78, which couples the received program signal streams to A/S processor 70. Receiver 78 may comprise one or more satellite dishes, for example. A/S processor 70 may comprise an acquisition processor, such as a digital integrated receive transcoder ("IRT") 80 and a staging processor 82, as shown in FIG. 3. A/S processor 70 receives and processes program streams for broadcast to service area nodes 16-1 through 16-m via hub 24 and HFC cable network 28. IRT ~~78a~~ 80 receives the digital program stream, decodes the stream and outputs an MPEG-2 signal stream to staging processor ~~80b~~ 82. Staging processor ~~80~~ 82 may re-encode a VBR program stream to a CBR stream, if necessary, as discussed above. The broadcast of program signal streams and headend 22 are described in more detail in the '015 application, identified above and incorporated by reference herein.

In the paragraph beginning at page 19, line 1:

The segmentation messages may also be used by the cable system to adjust program start and end times provided in the electronic program quote ("EPG"), as is also described in the '719 application, which is incorporated by reference herein. Start and end times for chapters and advertising, which is typically not provided in the EPG, may also be derived by cable system 14 based on the segmentation messages. EPG information may be provided to schedule manager 72 by a server 73 (as shown in FIG. 1) in the form of a program guide data stream that includes a program identification code (PIC) and the approximate program start and end times for each program.

In the paragraph beginning at page 25, line 7:

Other components of cable system 14 may implement embodiments of the present invention, as well. For example, FIG. 9 is an example of a terminal ~~400~~ 1400, which is representative of the set-top terminals 18-1 through 18-n of FIG. 1. Terminal ~~400~~ 1400 is typically coupled to a display device, such as a TV (not shown), at a user location. Terminal ~~400~~ 1400 includes interface ~~402~~ 1402, processor ~~404~~ 1404 and memory ~~406~~ 1406. Processor ~~304~~ 1404 may include PVR ~~308~~ 1408 as well. A program signal stream broadcast by headend 22 is received by interface ~~402~~ 1402. Memory ~~406~~ 1406 may store programming, such as local advertising, for example, for insertion into a program stream based on segmentation messages, as described in the '719 application, identified above and incorporated by reference herein.

In the paragraph beginning at page 25, line 16:

Processor ~~404~~ 1404 may retrieve each piece of advertising (and other stored programming) and implement method 100 of FIG. 4, for example, in accordance with an embodiment of the invention. Advertising (and other programming) inserted by the set-top terminal ~~400~~ 1400 will thereby have the proper loudness setting when inserted into a program provided by cable system 14. When the program transitions to and from the advertising, it should not, therefore, be necessary for a viewer to change the volume setting on their TV. Method 100 may also be implemented by PVR ~~408~~ 1408 on recorded programs, as well. A suitably programmed PVR that is not part of set-top terminal ~~400~~ 1400 could implement embodiments of the present invention on recorded programs as well.

In the paragraph beginning at page 28, line 7:

FIG. 11 is an example of a method ~~600~~ 1500 in accordance with another embodiment of the invention, that may be implemented by origination system 20 to properly encode at least the audio of pre-recorded programs.

In the paragraph beginning at page 28, line 10:

The pre-recorded program may be retrieved in Step ~~502~~ 1502. The program may be stored in memory 508 of Video Source 3 (broadcast video server) and may be retrieved by processor ~~570~~ 510, for example.

In the paragraph beginning at page 28, line 13:

As mentioned above, the audio portion of the pre-recorded program is typically stored non-compressed, in a PCM file. Other file formats may be used, as well. The loudness of the dialog is determined, in step ~~506~~ 1506. Dialog may be identified and loudness determined (Steps ~~504~~ 1504 and ~~506~~ 1506) by method 200 of FIG. 5, for example. Dialog may be identified in other manners as well,

such as frequency filtering, as described above

In the paragraph beginning at page 28, line 18:

The program may be encoded at a loudness setting corresponding to the determined loudness, in Step ~~508~~ 1508. The audio PCM ~~or~~ file may be provided to encoder 514 along line A while the determined loudness setting may be provided to encoder 514 along line B. Encoder 514 may encode and compress the ~~PC or~~ PCM file into Dolby AC-3 format, for example, multiplex the video portion of the program in MPEG-2, for example, and multiplex the audio and video.

In the paragraph beginning at page 29, line 1:

The program may be transmitted in Step ~~540~~ 1510. The multiplexed audio and video may be transmitted by satellite dish 518, for example.

In the paragraph beginning at page 29, line 3:

Alternatively, a compression value of the audio may be determined in Step ~~512~~ 1512 prior to transmission. For example, the DRC program profile may be set based on the dynamic range of the audio, based on the histogram of FIG. 7. The program may then be transmitted in Step ~~540~~ 1510.

In the paragraph beginning at page 29, line 10:

Method ~~600~~ 1500 may be used to properly encode the audio of a non-compressed program or an encoded program without a loudness setting such as DIALNORM, as well. For example, MPEG encoded audio does not have a loudness setting.